

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference PD53589PC	FOR FURTHER ACTION See Form PCT/PEA/416	
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International Patent Classification (IPC) or national classification and IPC H04Q7/22, H04M3/56, H04N7/15, H04L12/18, H04L29/06		
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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ sent to the applicant and to the International Bureau a total of 5 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 08.02.2005	Date of completion of this report 21.10.2005
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**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/010011

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-14 as originally filed

Claims, Numbers

1-26 received on 10.02.2005 with letter of 08.02.2005

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/010011

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-26
	No: Claims	
Inventive step (IS)	Yes: Claims	1-26
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-26
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Cited documents

The following documents (D) are cited; the numbering will be adhered to throughout the procedure:

D1: WO 03 010986 A

D3: US-B1-6 330 022

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

- 1.1 Independent claim 1 discloses a method for party positioning during voice communication between several portable communication devices.
- 1.2 Document D1, considered the closest prior art, discloses a method for transmitting customized visual/graphical data information from a mobile terminal to a number of other mobile or non-mobile terminals. The customized visual/graphical data information, e.g. avatars, of an end user can be changed by the end user during an on-going speech connection. The end user of the telecommunication terminal during a conference or multiparty call can select different attitude modes which are sent to the other parties involved in the communication.
- 1.3 A problem which arises at times during a conference or multiparty call is that a user has difficulty to recognize which party is speaking when a multiple of parties are participating. The problem is thus to identify who is saying what during such a conference or multiparty call.
- 1.4 The method of claim 1 solves this problem by allowing the user of a portable device to select the position of the other parties in the conference or multiparty call and positioning each connected parties at different positions in space to easily identifying them.
- 1.5 The user of a portable communication device can thus easily identifying which party

is active, i.e. which party is speaking ("providing audio information") since the position of the parties is chosen by himself on his volition.

- 1.6 Document D1 does not disclose or provide any hints to allow a user of a portable device to select the position of the other parties in the conference or multiparty call ("..selection of position of one of the other parties through inputs made by user of the portable communication device" as recited in claims 1 and 14) and positioning each connected parties at different positions in space to easily identifying them ("positioning the other connected parties at different positions in space in relation to the portable communication device" as recited in claims 1 and 14).
- 1.7 In view of these considerations, it seems that the subject-matter of claim 1 is novel and inventive (Article 33(1)-(3) PCT) over the closest prior art D1.
2. Independent claim 14 although phrased as an apparatus (portable communication device) claim is nevertheless a repetition of the subject-matter of method claim 1 and hence also meet the requirements of novelty and inventive step (Article 33(1)-(3) PCT).
4. Claims 2-13 and 15-24 are dependent on claim 1 and 14 and as such also meet the requirements of the PCT with respect to novelty and inventive step (Article 33(1)-(3) PCT).
5. Independent claims 25 and 26 (communication connection device and communication system) disclose a subject-matter similar to claim 1 with the additional feature of an audio information presented such that it is perceived as being positioned at the position in space of another party. This feature is already known from "the audio signal generated according to the assigned positions of the conferees that can be heard in stereo speaking in such a way as to relate to the assigned position" (abstract of D3).
However the difference mentioned in paragraph 1.6 is also contained in claims 25 and 26 and thus the claims meet the requirements of the PCT with respect to novelty and inventive step (Article 33(1)-(3) PCT).

Certain defects in the international application

6. To meet the requirements of Rule 6.3(b) PCT, the independent claims should be properly cast in the two-part form, with those features which in combination are part of the prior art (see respectively document D1), being placed in the preamble.
7. To meet the requirements of Rule 5.1(a)(ii) PCT, document D1 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.
8. Bracketed expressions that do not include reference signs (Rule 6.2(b) PCT) arise lack of clarity to the formulation of the claims and should thus be avoided: as a consequence the word "step" in the reference should preferably be avoided.

Certain observations on the international application

9. The various definitions of the invention given in the three independent apparatus claims 14, 25 and 26 are such that the claims as whole are not clear and concise, contrary to Article 6 PCT. The claims should be recast to include only the **minimum necessary number of independent claims** in any one category, with dependent claims as appropriate, Rule 6.4 PCT.
In the present case it is considered appropriate to use a single independent apparatus claim followed by dependent claims covering features which are merely optional.
10. Claim 5 is unclear since the reference to "visual space" cannot be retrieved in the dependent claim 4 depending directly on claim 1 (Article 6 PCT).
11. The use of inverted commas should preferably be avoided since they introduce an ambiguity on the feature contained (Article 6 PCT). The expression "drag and drop" in claim 24 should be replaced by drag-and-drop.

CLAIMS

- 5 1. Method for engaging a portable communication device in voice communication with a number of parties, comprising:

 - establishing connections between the portable communication device and at least two other parties (step 202),
 - detecting selection of a position of one of the other parties through inputs made by a user of the portable communication device, (step 204),
 - 10 - positioning the other connected parties at different positions in space in relation to the portable communication device (step 206), and
 - providing information in relation to the position of one of the other connected parties, when this connected party provides audio information over said connection (steps 208, 216),
 - 15 so that the user of the device can more easily identify which party is active.
- 20 2. Method according to claim 1, in which the step of positioning comprises positioning in visual space, (step 206).
- 25 3. Method according to claim 1 or 2, in which the step of providing information, comprises providing visual information on a screen, (step 208).
- 30 4. Method according to any of claims 1-3, in which the step of providing information, includes providing a representation that can be associated with said one of the other parties, when said other party provides audio information over said connection, (steps 208, 216).
- 35 5. Method according to claim 3 or 4, in which the step of providing information in visual space, comprises providing text and/or image information, (step 208).
- 40 6. Method according to claim 4, in which the step of providing information, comprises providing information for actuating the provided representation, (step 208).
7. Method according to claim 5, in which the step of providing information, comprises providing information for actuating the provided text and/or image information, (step 208).
8. Method according to any one of claims 1-7, in which the step of positioning comprises positioning in audio space, (step 206).
9. Method according to claim 8, in which the step of providing information includes providing audio information from said one of the other connected parties

processed, based on inputs made by a user, such that the processed audio information is perceived as being positioned in space at said other party when presented by the information presentation unit, (steps 212, 216).

- 5 10. Method according to claim 8 or 9, in which the step of positioning comprises determining control information to be used when providing processing audio information, (step 206).
- 10 11. Method according to claim 9 or 10, in which the step of providing audio information in space, includes processing said audio information of one of the other parties, such that the processed audio information is perceived as being positioned in space at the position of said other party when presented by the information presentation unit, (steps 212, 216).
- 15 12. Method according to claim 11, in which the step of providing audio information including processing of audio information, includes weighting of two audio streams of said audio information, such that the processed audio information is perceived as being positioned in space at the position of said other party when presented by the information presentation unit, (steps 212, 216).
- 20 13. Method according to claim 11 or 12, further comprising the steps of providing audio information from the portable communication device to at least one of the other parties and processing said audio information including equal weighting of two audio streams of said audio information, (step 212).
- 25 14. A portable communication device (100; 402) arranged to engage in voice communication with a number of parties, comprising:
 - 30 - a communication unit (102) for engaging at least two other parties in voice communication,
 - a user input unit (112), arranged to receive user inputs,
 - a control unit (106), arranged to enable positioning of the other connected parties at different positions in space, in dependence of inputs from a user on the user input unit, and arranged to detect selection, via the user input unit (112), of a position of one of the other connected parties,
 - 35 - at least one information presentation unit (108, 110), for which the control unit (106) further is arranged to provide information in relation to the position of one of the other connected parties, when said one of the other connected parties is providing audio information over a connection, so that the user of the device can more easily identify which party is active.
- 40 15. A portable communication device (100; 402) according to claim 14, in which the control unit (106), when positioning the other connected parties, is arranged to determine control information enabling positioning in audio space, for provision of audio information to be perceived as being positioned at the position of said

one of the other connected parties, in space.

- 5 16. A portable communication device (100) according to claim 15, further comprising an audio processing unit (104), arranged to process the audio information from said one of the other connected parties, based on the control information, and forward the processed audio information to at least one information presentation unit (108, 110), such that the audio information is perceived as being positioned at the position in space of said party, when presented by the at least one information presentation unit (108, 110).
- 10 17. A portable communication device (402) according to claim 16, wherein the audio processing unit (104) when being arranged to process the audio information, processes the information so that two differently processed audio streams of said audio information is provided.
- 15 18. A portable communication device (402) according to claim 15, wherein the communication unit is further arranged to forward said control information to an external processing unit (406), for processing audio information from said one of the other connected parties, said communication unit is being arranged to receive the processed audio information and forward, after possible further processing, said processed audio information to an information presentation unit, in a format allowing the audio information to be perceived as being positioned at the position in space of said one of the other parties, when presented by the the at least one information presentation unit.
- 20 19. Portable communication device (100; 402) according to any of the preceding claims 15-18, wherein the at least one information presentation unit (108, 110), comprises at least two speakers, wherein the perceived position in space, of said one of the other connected parties, is related to the positions of the speakers.
- 25 20. A portable communication device (100; 402) according to claim 14-19, in which the control unit, when locating the other connected parties, is arranged to determine control information enabling positioning in visual space, for provision of visual information perceived to be at the position in space of said one of the other connected parties.
- 30 21. A portable communication device (100; 402) according to claim 20, in which the control unit further is arranged to determine control information for presenting a representation of said one of the other connected parties, by using said at least one information presentation unit (108, 110).
- 35 22. A portable communication device (100; 402) according to claim 21, in which the control information comprises information for actuating the representation of said one of the other connected parties, by using said at least one information
- 40

presentation unit (108, 110).

23. A portable communication device (100; 402) according to claim 14-22, wherein the at least one information presentation unit (108, 110) comprises a screen.
24. A portable communication device (100; 402) according to claim 14-23, wherein the user input unit comprises a screen, which screen allows the user to input information (108, 110) in the form of "drag and drop".
25. Communication connection device (300) arranged to assist voice communications between at least one portable communication device and at least two other parties, wherein said portable communication device receives user inputs, establishes connections between the portable communication device and said other parties, detects selections of positions of the other parties, and determines control information based on the detected selection of position of the other parties from a user, enabling positioning in audio space,
- said communication connection device comprises:
- a transceiving unit (302, 310, 312), arranged to receive the control information,
 - an audio processing unit (306), arranged to process, based on the control information received by the transceiving unit from the portable communication device, the audio information of one of the other connected parties when said party is providing audio information,
- said transceiving unit, further being arranged to send such processed audio information to the portable communication device, in a format allowing the audio information to be presented such that it is perceived as being positioned at the position in space of said one of the other parties.
26. Communication system (400) comprising:
- at least one portable communication device (402);
 - at least two other communication parties (408, 410);
 - at least one communication connection device (406),
- in which system the at least one portable communication device (402) is arranged to engage in voice communication with at least the two other communication parties (408, 410) of the system, said at least one portable communication device (402) comprising:
- a communication unit (102) for engaging the at least two other

communication parties in voice communication in said system,

- a user input unit (112), arranged to receive user inputs,
- a control unit (106), arranged to determine control information enabling positioning of the other connected parties of the system at different positions in space, in dependence of inputs from a user on the user input unit, and arranged to detect selection, via the user input unit (112), of a position of one of the other connected parties, and
- at least one information presentation unit (108, 110), for which the control unit further is arranged to provide processed audio information in relation to the position of one of the other connected parties, when said one of the other connected parties is providing audio information over a connection,

in which system, said at least one communication connection comprising:

- a transceiving unit (302, 310, 312), arranged to receive the control information,
- an audio processing unit (306), arranged to process the audio information of one of the other connected parties when said party is providing audio information, based on the control information received by the transceiving unit from the portable communication device,

said transceiving unit, further being arranged to send such processed audio information to the portable communication device, in a format allowing the audio information to be presented such that it is perceived as being positioned at the position in space of said one of the other parties.